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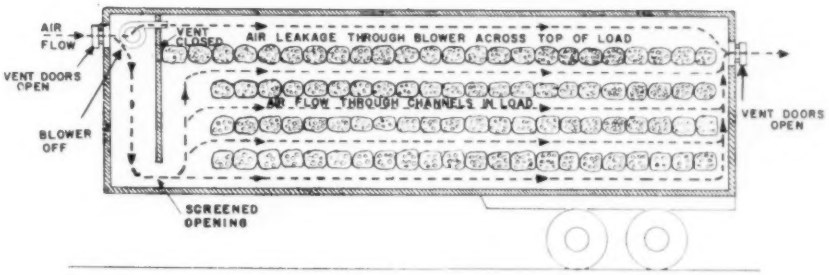
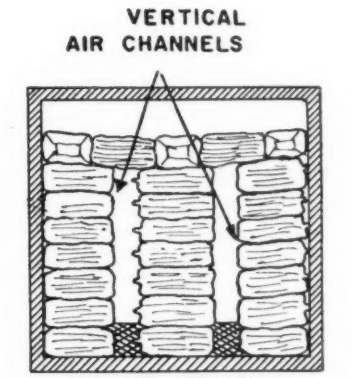
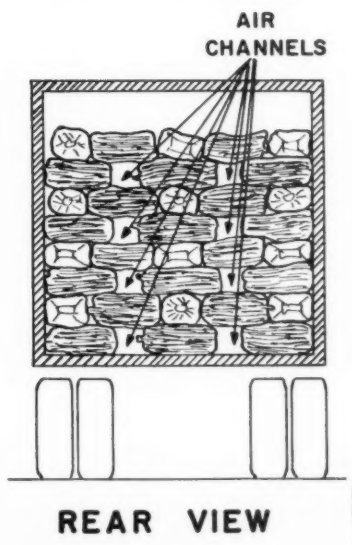
NEW STACKING METHOD CUTS POTATO SPOILAGE







by Russell H. Hinds, Jr.

A NEW METHOD of stacking bagged potatoes in trucks greatly improves the flow of air through the load during transit and thereby reduces spoilage and lengthens shelf life.

The stacking pattern, developed and tested successfully by transportation researchers in the Agricultural Marketing Service, provides eight air channels running from the front to the back of the trailer.

The first stack of potatoes in 50-pound paper bags is arranged in three columns with two vertical air channels each solidly capped with bags to prevent entering air from bypassing the remainder of the load.

All subsequent stacks have the bags arranged alternately crosswise and lengthwise in the trailer. The continuous channels for air passage occur in every other layer —two to the layer, eight in all. They are lined up at the same spot in each layer to form the channels from front to rear.

By closing the inside vent in the bunker bulkhead, air entering through the front vents on the trailer's nose is forced to the bottom of the bunker. It then passes through the bottom opening in the bulkhead into the vertical channels of the first stack. From here the air goes into the horizontal air channels and through the load.

A small amount of air leaking through the blower at the top front of the trailer provides circulation across the top.

An improved stacking method—one that allows good air circulation —has long been needed by the potato industry. Proper ventilation is especially important in the movement of early varieties either from north to south, or south to north. These early potatoes are tender and particularly susceptible to spoilage from overheating.

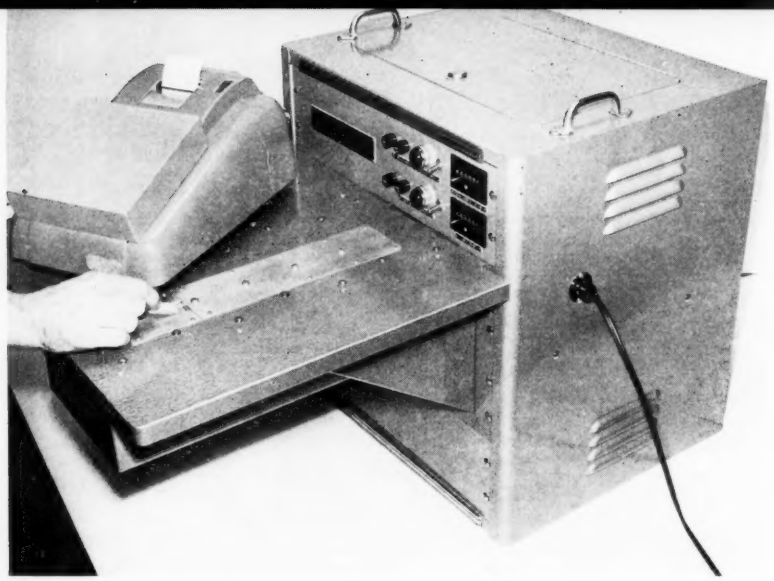
The eight air channels, prescribed by the researchers, overcome this difficulty. And, surprisingly enough, there is little, if any, loss of load capacity. To compensate for load space taken up by the air channels, the load is stacked a little higher.

But, the experts point out, even were some load space sacrificed, the results would be worth it.

Currently, about 2 percent of the early crop potatoes shipped by truck spoil en route. Another 2 percent are lost in the retail store—the result, at least in part, of overheating during transit.

The improved stacking method should cut these losses considerably, provide the public with better produce, and save money all along the marketing line. This means a better break for the farmer, the dealer, and the consumer.

The author is a marketing specialist in the Transportation and Facilities Research Division of AMS. He is stationed at Orlando, Fla.



This is the wool staple length recorder which takes the human element out of measuring quality. The new machine can accurately measure length of a staple within tenth of an inch.

A Wool Staple Length Recorder

A WOOL staple length recorder, which takes the human error out of measuring quality, has been developed under contract with the Market Quality Research Division of the Agricultural Marketing Service.

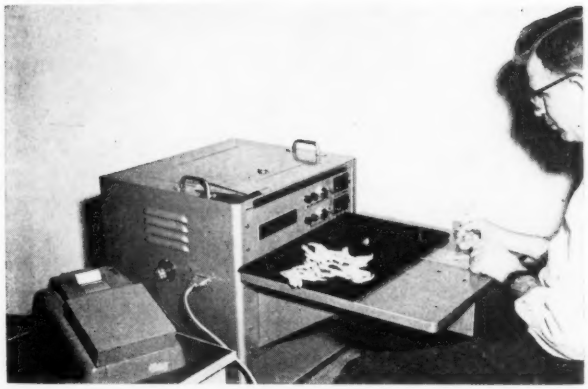
A vital improvement over currently used hand methods, the new machine accurately measures the length of grease wool staples within a tenth of an inch. It can handle samples from 0.2 inch to 9.9 inches in length.

Results of the mechanical measurements are recorded on standard adding machine paper. In addition, the instrument registers the total length of a group of staples and counts the number of staples so the average length can easily be determined.

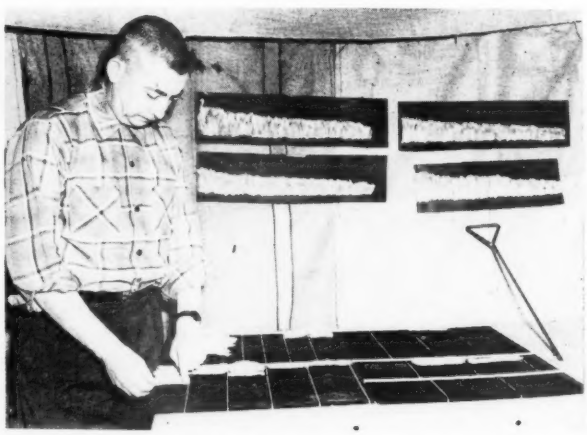
According to Dr. Calvin Golumbic, Head of the Quality Evaluation Section which supervised its development, "the new recorder puts the evaluation of grease wool staple length on a modern basis. It replaces subjective with objective analysis."

Still in its testing phase, the new recorder is now being studied in the field. Elroy M. Pohle, Head of the Livestock Division's Wool Laboratory in Denver, plans to use the machine in wool warehouses from coast to coast as part of a regular program designed to demonstrate more scientific methods of evaluating wool quality.

With a more accurate measurement for staple length, a uniform evaluation of wool quality should develop. The grower can then be sure, beyond a doubt, that the staple length assigned to his wool is consistent with staple lengths assigned elsewhere in the country.

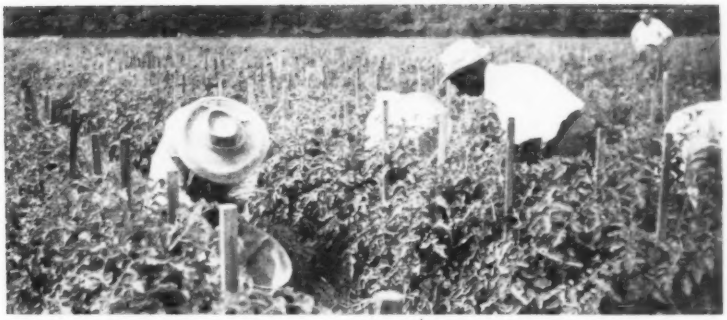


Staple moves into recorder where it intercepts electronic beam. While beam is cut, electric pulses record each tenth of an inch in length of staple.



At present, graders evaluate staple length by measuring individual staples. This is a tedious and time consuming task as shown in the above photograph.

The Weekly Florida Tomato Planting Report



by J. C. Townsend, Jr.

EACH WEEK during the fall, winter, and spring, Florida tomato producers are kept up to date on the planting activities of fellow growers throughout the State. Their information comes from the Weekly Florida Tomato Planting Report, a single sheet of data that serves the farmer, the shipper, and the buyer—letting them know the size and location of Florida tomato crops long before they are ready for market.

The weekly planting report was begun in 1956 by the Florida Tomato Committee, the local administrative agency for the Federal Marketing Order for Florida tomatoes. The Committee and the Agricultural Marketing Service of the U. S. Department of Agriculture at this time agreed to match funds to operate an information program for the Florida tomato industry.

Under the Federal-State Matching Fund Program, the AMS State statistician employs a small but competent team to cover all the tomato-growing areas in Florida. These men gather facts on seeding and setting, and information on how the harvests are progressing. They also assemble, from various sources, figures on weekly tomato shipments.

From this running inventory, the Florida Crop and Livestock Reporting Service makes up the Tomato Planting Report. The report begins with the number of tomato acres seeded and set by area and compares the plantings with those of the previous year. It gives the rainfall and temperature ranges in the tomato growing sections of the State.

The total acres planted and the date of each planting are presented in chart form as well as the volume of the weekly shipments made each year. Shipments are compared with those of a year earlier and with the five-year average.

Concise comments on harvesting and shipping activities in various areas wind up the week's report.

At times, however, the Tomato Planting Report deals with the unexpected—like the damaging frosts that sometimes hit Florida. Last January 26, immediately following the cold spell, a preliminary report on the extent of damage was circulated instead of the usual information.

The frost brought a rapid reevaluation of the Florida tomato crop. How much damage had been done? What portion of the crop would have to be replanted? How serious a cut in market shipments would result?

Answers to these and other questions reached the growers through the report and helped them to take inventory of the situation and plan accordingly.

Before the Tomato Planting Report was begun, the chief source of information available to Florida growers was a monthly forecast of production for the quarter. No clue was given as to the harvesting pattern within the growing seasons, and the producer never knew what was being planted even in nearby sections of the State.

Shippers were uncertain about the quantity of Florida tomatoes that would be available for specific periods, and stores throughout the United States did not know the potential rate of flow of the Florida crop.

The Florida Tomato Planting Report has become a valuable and accurate bulletin for the industry. It also demonstrates how similar reports could be used for other vegetable crops which have consecutive or continuous plantings.

Comments on the tomato report are, for the most part, overwhelmingly favorable.

One Florida producer says, "The tomato report is the most accurate and helpful report ever compiled and released to the farmer."

Another comments, "It helps growers in various areas to avoid overplanting when it appears that overplanting is in progress."

A somewhat less enthusiastic grower points out, "In some instances, it has been useful. But it has also been useful to my competition."

There is little doubt that the report is helpful in avoiding excessive production peaks and periods of oversupply. Growers guide their planting by it. Shippers watch it closely to anticipate variations in market supply, and at least one organization makes no secret of the fact that the price they set each week for tomatoes is influenced by the weekly tomato planting report.

The author is an agricultural statistician. He is in charge of the Federal-State Crop and Livestock Reporting Service, Orlando, Fla.

USDA'S *Market News Service* FOR THE BROILER INDUSTRY

by E. H. Hansen

USDA market news plays an important part in the multimillion-dollar broiler industry. An essential aid to orderly marketing, it keeps producers, processors, and distributors in hourly touch with buying and selling activities throughout the Nation.

Neither farmers nor dealers can afford to base their business transactions on hearsay or guesswork. They must have reliable, up-to-the-minute market information if they are to stay in business—and keep supplies rolling to markets in the volumes needed by consumers.

The Dairy and Poultry Federal-State Market News Service gives them this information. Its reports are both timely and accurate.

Reporters stationed at key points across the country furnish "at farm" live poultry prices from 26 producing areas and prices on ready-to-cook poultry from 17 consuming centers. Thirteen thousand miles of leased wire transmit these reports from coast-to-coast.

The reports themselves are based almost entirely on information given to the reporters by the industry.

The reporter, however, lists only prices which represent bona fide transactions between independent buyers and sellers. Whenever possible, he confirms the information by contacting both parties to the sale.

If this is not possible, or if for some reason he is not completely sure of the information, he classifies the transaction as "undetermined."

This presents the broiler industry—and the Market News Service—with one of its chief problems. Very often, there is a high percentage of "undetermineds" in a report. Such listings are not particularly helpful to the industry, yet they are unavoidable.

What happens is this. In some localities, a considerable volume of poultry is sold on the basis of reported prices. Because the prices for these sales are not established until after the market news report is released, the transaction cannot be reported. But, to account for it at least in part, the reporter places the volume sold in the "undetermined" category.

Until more buyers and sellers are willing to make definite price settlements prior to release of the reports, the percentage of "undetermined" entries will remain high in some areas.

Increased integration of growing and processing operations in the poultry industry also has affected live poultry reporting. Poultry movements in such operations are considered intracompany transfers. Since prices can only be reported when buyers and sellers are financially independent of each other, these transfer prices cannot be recognized for reporting purposes.

Although complete integration throughout the entire country is not likely, the poultry industry is concerned about the fact that definite price information on live poultry is available only from a relatively few sources in some areas.

A further complication in the reporting of live poultry is the variation in arrangements between buyers and sellers. That is, who assumes the cost of loading and catching, who suffers condemnation losses, and how do you figure in discounts and premiums?

All these factors throw up stumbling blocks for the market news reporter. And if they persist, the reporting of bona fide live poultry prices may some day become impossible.

Consequently, the reporting of ready-to-cook poultry prices is rapidly gaining emphasis. This phase of the Market News Service could be expanded beyond the 17 points already covered, and shipping point prices in major producing areas added to the report. Price and volume information from both these points would be a valuable aid to the industry and should not be difficult to obtain.

The author is Eastern Area Supervisor of the Dairy and Poultry Market News Branch, AMS.

CHANGES IN USDA GRADE STANDARDS FOR LAMB

by W. E. Tyler

Revised USDA standards for lamb which went into effect March 1 may help broaden the market for lamb.

One reason this may come about is that the new standards provide for two broad working grades—U. S. Prime and U. S. Choice—which should result in sufficient volume for effective merchandising. This will be in sharp contrast to the situation that existed before the change when the only grade emphasized in merchandising to any extent was U. S. Choice.

Previously, only a small quantity of lamb was produced and graded as U. S. Prime. This usually went to steamship lines, hotels, and other institutional users.

Lower quality lambs usually were not presented for grading.

If retailers and others place enough merchandising emphasis on the Prime grade, it will become and remain a workable grade. Failing this, the Prime grade will again tend to disappear because producers will not feed lambs to this quality unless there is incentive in dollars and cents for them to do so.

Another reason the revised standards may help broaden the market for lamb is that the revision should have the effect of lowering the average fatness in the Prime and Choice grades, thus meeting expressed consumer preferences for less fat on meat.

Stated in simplest terms, the revision reduces the minimum requirements for the Prime and Choice grades. Lambs in these grades will have less "finish," or fat.

This is particularly true for the more mature lambs that are marketed in the late fall and winter. Some types, marketed as mature lambs, when fed for sufficient time to meet previous requirements for internal quality developed a heavy layer of external fat, though there was no requirement for external fat. Now a large proportion of these mature lambs that previously qualified for Choice will be identified as Prime.

The Choice grade will consist in large part of lambs that formerly would have been graded Good or sold without a Federal grade.

The revision affects somewhat less the very young lambs marketed in the spring, summer, and early fall. These animals generally are "milk fat" lambs requiring little or no feeding and therefore carrying less external fat. The upper half of the Choice and Good grades, as applied to these lambs, were moved into the next higher grades.

Corresponding changes have been made in the grade standards for yearling mutton and mutton.

Another important aspect of the revised standards is the change in the method of applying the standards—in particular, in the basis for evaluating quality.

Lamb (as well as yearling mutton and mutton) is graded on a composite evaluation of two general grade factors—conformation and quality.

Conformation indicates the proportion of wholesale cuts in relation to carcass weight and the proportion of lean meat in relation to bone in the carcass. Though *requirements* for conformation have been changed (reduced by about one-half grade for both Prime and Choice), no change has been made in the *method* of evaluating this factor.

However, in addition to reducing

(*continued on page 16*)

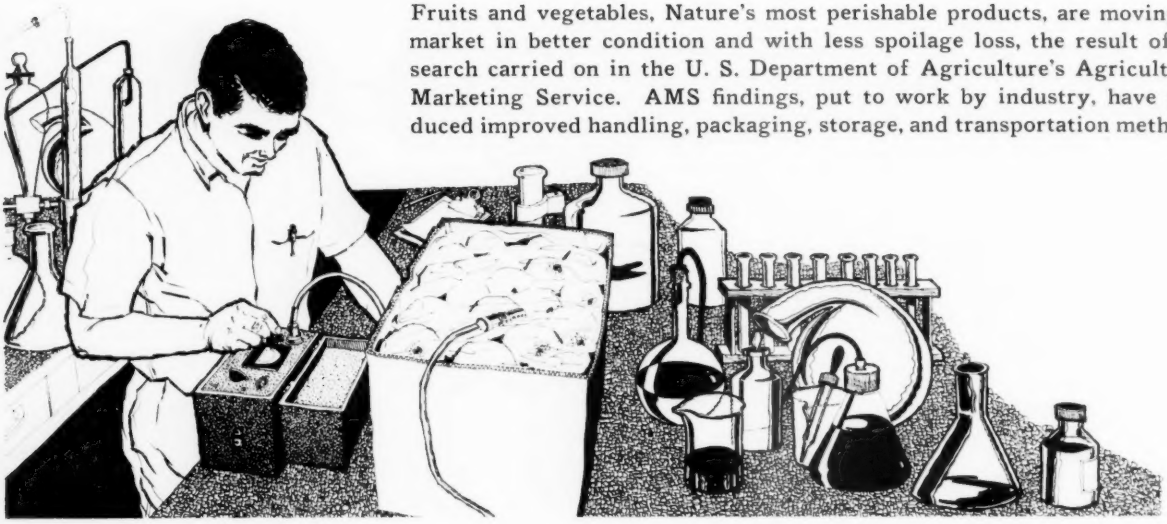
The author is Chief of the Standardization Branch, Livestock Division, Agricultural Marketing Service.

Improved Methods Bring

BETTER QUALITY *PRODUCE* TO

and reduce marketing costs

Fruits and vegetables, Nature's most perishable products, are moving to market in better condition and with less spoilage loss, the result of research carried on in the U. S. Department of Agriculture's Agricultural Marketing Service. AMS findings, put to work by industry, have produced improved handling, packaging, storage, and transportation methods.



Polyethylene film, recommended by AMS scientists for use as box liners, maintains a high humidity during storage and transit. This is an important factor in keeping apples wholesome. Use of polyethylene liners, saves the apple industry over $100,000 a year by reducing spoilage losses.

Faster loading and unloading means fresher, better quality produce at the retail store. Large forklift truck below can unload a complete truckload of cartoned food in one operation. Forklift at left piles produce high in the warehouse, cuts both handling and warehousing costs.

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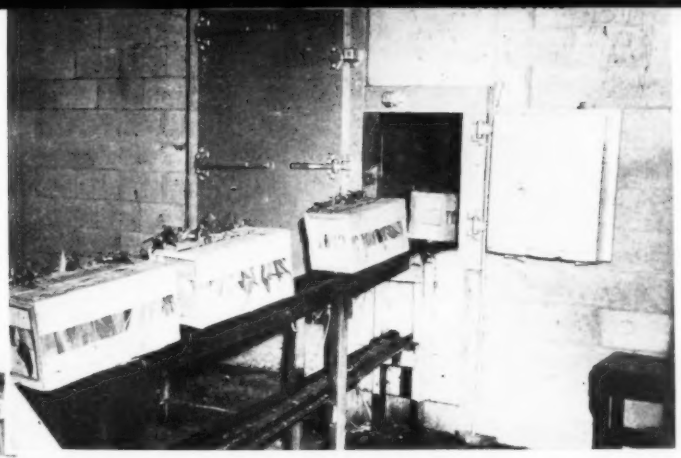
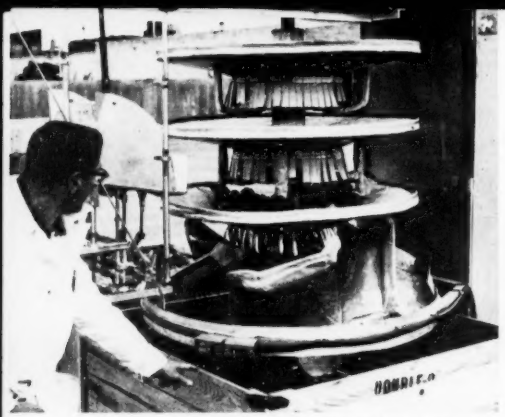


An important part of quality maintenance centers around the proper cooling of fruits and vegetables. Hydrocooling is one way to quickly remove field heat. A trip through a hydrocooling room (photo, top right) takes about 28 minutes. Produce then continues on its way to waiting rail cars or trailer trucks. To be sure it keeps cool enroute, the crates receive a liberal "snowing" of ice. For many products—though by no means all—transit temperature should be kept as low as possible without freezing.

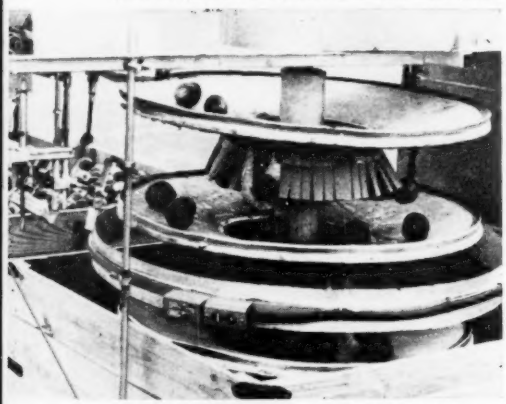
AMS, in cooperation with the Campbell Soup Company, has conducted research on shipping bare-root tomato transplants in polyethylene lined crates.

Marketing research points up the necessity of keeping frozen juices at a temperature of 0° F. or below—from the warehouse to the retail store. If this temperature is not carefully maintained, juices and other frozen foods suffer both in vitamin value and taste.

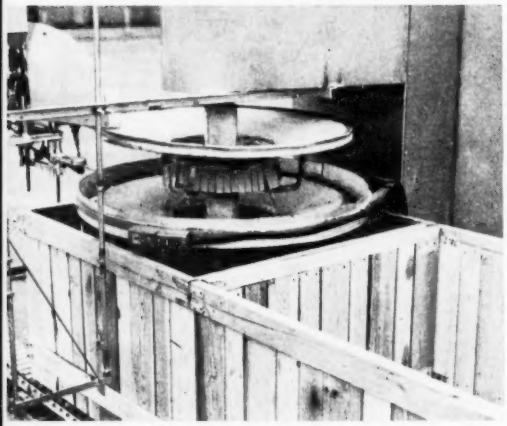
AMS research showed the advantages of storing strawberry plants in poly-lined crates. Now an estimated 100 million strawberry plants are stored annually in polyethylene.



Here is the new automatic pallet box filler which promises packers a big saving in both time, labor.



Initially, the filler is completely inside pallet box. As fruit flows in, it is raised by an hydraulic lift.



Straight-through packing line, above, moves pallet boxes under filler from one side and out the other.

To protect apples from bruising, brace supporting last disc of the automatic filler is well padded.

A NEW AUTOMATIC PALLET BOX FILLER FOR APPLES

by Joseph F. Herrick, Jr.

PALLET BOXES, which are fast becoming the most popular method of holding fresh apples in storage, can now be filled mechanically with no substantial damage to the fruit and a big saving in time and labor.

The new automatic pallet box filler, designed under contract with the Agricultural Marketing Service, eases the fruit down a series of rotating discs and baffles, and into the box.

At the start of the filling operation, the entire filler is lowered into the empty pallet box. As the apples flow in and the box is filled, an hydraulic lift moves the filler upward until the apples reach the top of the pallet box and the mechanism turns itself off.

Only one worker is needed—and then only part-time—to attend the filler. Actually, just 14 seconds of productive labor are required to change boxes.

However, if several mechanical fillers are used together, it might be necessary to employ a second attendant, because sometimes two boxes might require changing at the same time.

Even with two men working the fillers, it would cost considerably less than using a manual method.

As far as time is concerned—here too the savings are marked. The mechanical filler can pack one pallet box every 5 minutes, or 6.77 standard apple box equivalents per minute.

Extensive tests at various stages of its development show that the automatic filler causes no significant bruising to the fruit. In no instance was bruising serious enough to lower the grade of the apples.

Another advantage of the mechanical pallet box filler—one which is not immediately apparent but which hinges directly upon its use—is the economy that results from increasing the cold storage capacity of marketable fruit.

To explain: About 15 percent of the fruit, as it comes from the field, is misshapen, of subsize, and of poor color. If these apples are removed and only salable fruit is placed back into pallet boxes with the automatic filler, money can be saved in the use of storage and refrigeration facilities and a better marketing program would be possible.

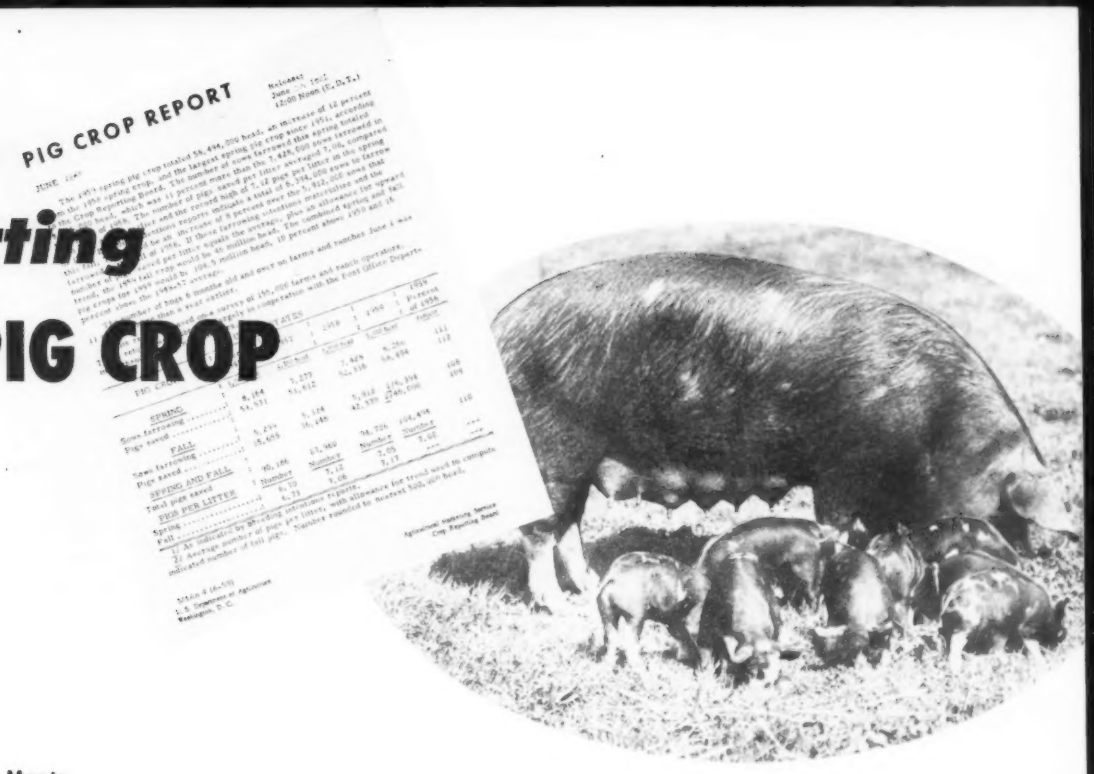
The design of the mechanical filler makes it suitable for either a right angle or a straight-through packing line layout. That is, the boxes can either be fed in from one side and out to the front, or they can be moved underneath the filler and straight out the other side.

Both installations permit an efficient handling operation. Experienced operators need only 16 seconds to change boxes with a right angle layout, a scant 14 seconds for a straight-through line. This time includes lowering the pallet box filler into the empty box.

More details about the design and construction of the automatic box filler and its several advantages will be published later this year in a regular U. S. Department of Agriculture report.

The author is Assistant Head of the Handling and Facilities Research Section, Transportation and Facilities Research Division, AMS.

Reporting THE PIG CROP


PIG CROP REPORT

by Robert H. Moats

A LOT is being said about the Nation's pig crop these days. How many pigs will there be? Where are they being raised? When will they go to market?

These questions are being asked by livestock marketing agencies, livestock handlers, meat packers, cold storage firms, feed and supply companies, and farmers.

Answers to these questions can be found in the USDA pig crop report due out June 21. Facts for all States except Hawaii and Alaska will be included. A similar report will come out December 22.

The semiannual pig crop reports, published by the Crop Reporting Board of the Agricultural Marketing Service, give valuable clues to future marketings. Included are estimates of sows farrowing each month during the 6-month period prior to the report, pigs saved during this period, and farrowing intentions for the following 6 months by States. Also, the number of hogs by classes on hand June 1 and December 1 in 10 leading hog producing States are listed.

Two other pig crop reports provide information for each of 10 leading States. One was published March 17. The other is due out September 19. These reports give quarterly estimates of sows farrowed, farrowing intentions, and hog inventories by age classes.

In addition, the Board puts out a monthly report on commercial hog slaughter by States, and an annual report on the production and disposition of hogs, and the income from them. January 1 inventories and inventory values by States are published about February 12 in the Livestock and Poultry Inventory Report.

The wealth of information contained in these reports comes mainly from the farmers themselves. Questionnaires, distributed by rural mail carriers to a cross section of farmers on their routes, provide the data for the June and December reports. Farmers on special lists maintained by State statisticians give figures for the March and September reports.

In several leading hog producing States, information on farrowing comes from annual State farm censuses, usually made in the spring by tax assessors. Other sources are tapped, including voluntary reports from livestock marketing agencies, stockyards, livestock auctions, slaughter houses, and transportation concerns.

The initial estimates, issued only 3 weeks after the end of the farrowing season, have been quite reliable. From 1948 to 1957, the initial estimates of the year-to-year changes in spring farrowings averaged within 1.2 percentage points of the final estimates.

For three years, the estimates held without change. They were within 1 percentage point 3 years, 2 percentage points for 3 years, and 3 percentage points for 1 year.

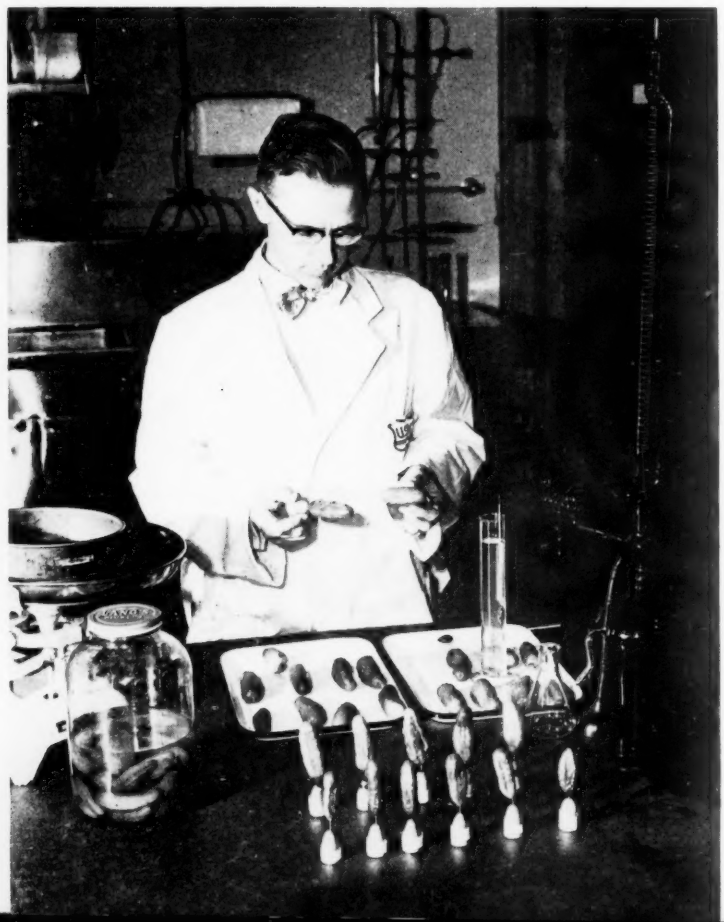
Intentions are reported at the start of the farrowing season so that farmers can change their plans. Their changes amounted to only 1 percent in 3 of the past 12 years; 2 percent, 1 year; 3 percent, 5 years; 4 percent, 2 years; and 6 percent, 1 year.

The author is Chief of the Livestock and Poultry Statistics Branch, Agricultural Estimates Division of AMS.

CHANGING *Grade Standards* FOR PROCESSED FRUITS AND VEGETABLES

by Elinore T. Greeley

Descriptions of quality factors in USDA grade standards for processed fruits and vegetables are supplemented by models.



LANGUAGE has long been man's best means of communication. And, because of its usefulness, people are constantly working to improve and expand it—so that it better suits their particular purposes.

In the Fruit and Vegetable Division of AMS, standardization specialists have developed—and still are developing—a common "language of marketing" for buyers and sellers of processed fruits and vegetables.

These are the USDA grade standards which serve the trade as a yardstick for expressing varying degrees of quality.

Since quality—the flavor, texture, color, and certain other characteristics of a product—determine its acceptability and therefore its value, these standards are especially important. They must be reliable and accurate.

Before any new standard is set up or any change made in current standards, specialists in the Fruit and Vegetable Division carefully study the product. They work closely with industry to determine if the processing techniques or trading practices have changed sufficiently to warrant a revision. And, if the product is completely new, they conduct a comprehensive study into its properties, production, and marketing.

Only when the standardization experts are thoroughly familiar with the product—and fully convinced of the need for revised or new standards—do they start to set up the actual specifications. Then

The author is Head of the Standardization Section, Processed Products Standardization Branch, Fruit and Vegetable Division, AMS.

In developing grade standards for french fries, USDA artists prepared models to show ranges of acceptable color and shape. These now serve as guides for actual grading of the product.

they work long and hard to find suitable requirements for each of the grade classifications and the means to properly describe them.

Take the case of frozen french fried potatoes. Back a few years, you probably hadn't even heard of this product. Yet today, it's a big seller—used by millions.

When frozen french fries appeared generally on the market, AMS's Fruit and Vegetable Division was asked to draw up grade standards. They talked to processors, to wholesalers, to buyers for food stores, and to consumers to find out what were considered important quality features. They analyzed samples of french fries for color, differences in shape, and fry characteristics.

Models of strips of french fries, specially prepared by an artist, were checked against actual products to determine and illustrate ranges of acceptable color and shape.

Then, the specialists set up their standards—standards that accurately described frozen french fried potatoes and served the industry as a convenient basis for sales of the new product.

At first, frozen french fry packages contained a lot of small, thin shavings. These were good wholesome food, but not suitable for a high quality product where uniformity of size and thickness play an important part in the final "heat and eat" test.

As the industry developed and became more knowing, some manufacturers separated these "slivers" from the product and directed them into other potato products. They also developed a better understanding of the chemical and sugar content of potatoes. Industry is now able to eliminate both overdone and underdone "fries."

But this isn't the end of the french fry story. As manufacturing conditions and trading practices change in the french fry industry, USDA standardization specialists will review and re-evaluate the standards to see that they remain current and effective.

This, fundamentally, is the aim of these specialists—to keep their standards abreast of the times and in harmony with industry needs.

Ours is a dynamic marketing system. Nothing ever is static—neither products, production processes, nor trading practices. Right now there are 141 standards for processed fruits and vegetables. Seventy of these are for canned items, 43 for frozen and chilled, 14 for dried and dehydrated fruits, 7 for sugar products, and another 7 for products like olive oil and peanut butter.

This is today. Next year these numbers may be completely different. New foods are constantly appearing on the market and old ones improving in quality.

Recommendations for new or revised standards come from individuals and groups in the marketing system—usually processors, distributors, or large-scale users of the products. Because use of official grade standards is voluntary, the Department works only on those standards for which industry groups have expressed a need. In this way, the limited personnel and time available can be concentrated on standards which will be used by the industry.

Briefly, here's how a standard is developed or revised.

AMS specialists first make a thorough study of the product. Samples are selected from a broad range of quality—from products processed under varying conditions and from differing qualities of raw produce.

After studying the samples, as well as information provided by the industry, the specialists draw up a preliminary draft of the standard for discussion with interested groups.

A tentative standard is then published in the Federal Register, and a press release issued to interested trade papers. Except in rare instances where an emergency makes immediate action imperative, interested parties are invited to study the proposal and submit their views.

After all comments are carefully considered, the standard, now in final form, is published once again in the Federal Register, along with the date on which it will become effective. A press release also goes to the trade journals. The detailed standard is then printed in a handy leaflet, and thousands of copies are distributed without charge to those who request them.

Thus, the "language of marketing" is changed—not as casually as you may change the more common language of a people—but with careful forethought and the full understanding of everyone involved in its use.

Lowering PRICE MARKING COSTS *in Retail Food Stores*

by Paul Shaffer and James Karitas

DID YOU KNOW that if all of the retail grocery stores in the country reduced the time it takes to handle a case of groceries by one second, the industry would save $2,000,000 a year?

It's true. And, according to Agricultural Marketing Service researchers, there are many ways to do it.

Take the comparatively simple process of marking the price on individual cans, bottles, and cartons.

AMS marketing researchers figure it's possible for the average supermarket to save more than $500 a year in this comparatively minor phase of its distribution operation.

This can be done by greater efficiency through the use of better equipment.

Most price marking materials are awkward to use and time-consuming. Automatic self-inking band stampers must be adjusted for each new price, while the 106-stick stamp sets are bulky and need frequent inkings.

The problem, as the researchers saw it, was one of eliminating current difficulties. They began with the stick stamps—which were, tests showed, the better of the two methods being used. The trouble with these was three-fold:

- The kit was too large for easy handling at the shelves.
- Many stamps were infrequently used.
- And too often the stamps became dried out.

Research at several midwestern food stores indicated that 59 prices were used on 85 percent of the merchandise sold. So, AMS personnel developed a kit containing only these 59 prices. That took care of both the first and second problems.

Now, what about the drying out? Frequent use would eliminate some of this, but something more definite still needed to be done. It took a complete overhaul of the stamp set.

Industrial engineers designed a new stamp holder that places each price marker lightly on a foam rubber inking pad. In this way, there is no need to manually ink the sticks each time they are used. The pad requires reinking only every two weeks.

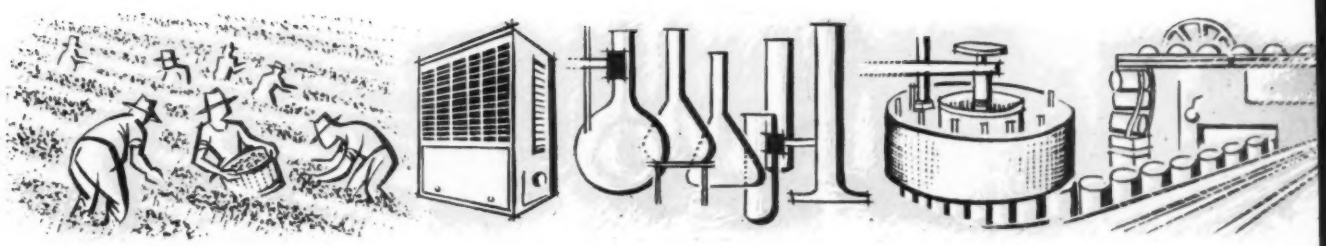
In test runs at a typical supermarket, the 59-stick stamp set saved $4.90 on each thousand cases of goods priced. Using a band stamper, the stock boy spent 24.1 seconds in marking a case of groceries. With the conventional 106-stick stamp set, it took him only 17.3 seconds. But, with the AMS-designed price markers he was able to cut his time to 15.3 seconds.

Figure this out for a year—in a store handling 2,000 cases a week—and you'll see that the 59-stick set is $510 less costly to use than the band stamper. It also is $114 less than the conventional large stamp stick kit.

In addition, the 59-stick set itself costs less than either of the others.

These savings, accrued at the retail level, may be passed along to the consumer in the form of lower prices on the goods he buys and to the farmer in higher prices for the foods he produces.

The authors are marketing specialists in the Minneapolis field office of the Transportation and Facilities Research Division, AMS.



The Changing Market

Increased Efficiency Reduces Marketing Costs

Increased efficiency and lower transportation costs resulted in reduced marketing costs for fruits and vegetables during 1959. Many of the improved marketing practices by the industry resulted from findings made by researchers of the Agricultural Marketing Service of USDA.

After trending upward all during the 1950's marketing margins for fruits and vegetables decreased in 1959. Farmers' prices for fresh fruits and vegetables averaged slightly less than a year earlier, and retail prices were down about 5 percent. For processed items, an increase in prices paid to farmers resulted in an increase in retail prices.

Marketing margins for fruits and vegetables have not risen as much since World War II as margins for several other product groups. Several things happened to hold down margins for fruits and vegetables. Costs were held down by a reduction in certain rail rates, wider use of fiberboard containers, greater productivity per marketing employee, more direct buying, and the extension of self-service at the retail level.

Transportation charges made up a substantial part of the marketing bill. In 1958, however, railroads began offering "incentive" rates on certain fresh fruits and vegetables shipped in volume.

For example, the rate per 100 pounds of carrots shipped from Salinas, Calif., to New York, which is $2.35 on a minimum 30,000-pound carlot, was reduced to $2.19 for a heavier, 40,000-pound load.

Labor costs, another major part of the marketing bill for fruits and vegetables, were held down by improved productivity. Although the average hourly earnings of employees in the canning and preserving industry rose to $1.73 in 1959, increased output kept total labor costs from rising as much as hourly earnings.

Changes in marketing practices and channels also kept last year's marketing costs down.

The shift from wood to fiberboard containers saved money not only in initial purchases, but all along the marketing line. Fiberboard containers cost less to pack, handle, and load. Because they weigh less and make a more compact load, they achieve economies in freight and refrigeration costs as well.

The extension of self-service in retailing produce is still another example of cost-reducing methods. Prepackaging of fresh fruits and vegetables and an increase in the proportion sold in processed form have helped here.

Direct buying, which bypasses several handlers and middlemen, further contributed savings in procurement and handling costs.

Together, these—as well as many other—factors brought the marketing margin for fruits and vegetables down for the first time in nearly a dozen years.

Conveyor for Potato Storages

A lightweight conveyor for filling deep-bin potato storages has been developed by AMS researchers at the Red River Valley Potato Research Center at East Grand Forks, Minnesota.

The 40-foot conveyor, supported from a ceiling track, moves a truckload of potatoes into storage in about 10 minutes.

Two men are enough to operate the conveyor, but a third man must be available to help shift it from time to time. This extra helper is needed for a half-hour period four times during the filling of a 4-bin, 50,000-hundredweight storage.

The cost of the conveyor and auxiliary equipment runs about $1,700, no more than other modern equipment used to fill above-ground storages.

Although the conveyor may damage 5 to 20 percent of the potatoes going into the bin, only ¼ to 1 percent are injured sufficiently to put them out of the U. S. No. 1 grade. This is less than half the number injured by a conventional canvas chute.

Complete information on the new bin filler may be found in AMS-362, "A Light-weight Conveyor for Filling Deep-Bin Potato Storages."

The publication contains 14 illustrations showing the conveyor in operation as well as 11 scale drawings complete with construction details.

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The Changing Market

Wool Warehousing Practices

Improved preparation of wool and greater efficiency in its marketing could make our wool better able to compete with imported wool and man-made fibers, a recent USDA marketing research report states.

The report, MRR-383, which covers the wool warehousing industry of the central and eastern States, provides basic information on the facilities and equipment used to prepare and handle wool at the warehouses, the charges or costs involved, and operating practices and problems.

These data can serve the industry as background material for more detailed engineering and cost studies which can, in turn, result in a more efficiently run business and a more competitive product.

The study, conducted by researchers in the Agricultural Marketing Service, is part of a nationwide research program to improve efficiency in marketing farm products. It is a companion to wool warehousing practices in 11 western states, a publication of the New Mexico Agricultural Experiment Station.

Taxes for Food Products

Food processing, wholesaling, and retailing corporations paid out $1.7 billion in taxes during 1957. This represented a 71 percent increase over the 1947-49 average tax bill.

Roughly three-fifths of the money in 1957 went for Federal income taxes. Also taking a sizable slice —and together accounting for 40 percent of the moneys—were real estate and personal property taxes, social security, unemployment insurance, State income, franchise taxes, and license fees.

Of the total tax payment in 1957, food processors paid 66 percent, retail stores 23 percent, and wholesale food firms 11 percent.

According to the 1954 Census, corporate wholesale food firms accounted for about 59 percent of sales of food at wholesale. Similarly, corporate retail food stores accounted for about 45 percent of total retail food sales in 1954, and corporate food processing firms for about 89 percent of the value added by manufacture in the food and kindred product industry.

Retailing Produce under PAC Act

Food store operators who do a large-scale business in fruits and vegetables must be licensed under the Perishable Agricultural Commodities Act.

To inform these retailers of their obligation and to explain how the PAC Act affects them, a 4-page guide booklet has been issued by the Agricultural Marketing Service, which administers the Act.

The leaflet explains the purpose of the PAC Act (to establish and maintain good marketing practices in the produce business) and describes how PACA licenses serve as a method of enforcing the law.

The leaflet is available (single copies without charge) from the Marketing Information Division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington 25, D. C. Ask for AMS-357, "What Retailers Should Know About Being Licensed under the Perishable Agricultural Commodities Act."

Changes in Lamb Grades

(continued from page 7)

quality *requirements* for the two top grades, the *method* of evaluating the quality of lean flesh has been changed for all grades. The revision calls for equal consideration of three quality factors: the feathering (the quantity of fat intermingled with lean) between the ribs, the streaking of fat within and upon the flank muscles, and the firmness of the fat and lean. These quality factors are considered in relation to the maturity of the carcass.

The major effect of these changes was to provide slightly less emphasis on feathering and to increase the relative importance of firmness as a quality factor.

The standards for lamb, yearling mutton, and mutton were revised in response to requests from lamb producers and packers. Coordinating changes in the standards for grades of slaughter lambs, yearlings, and sheep also are being made.